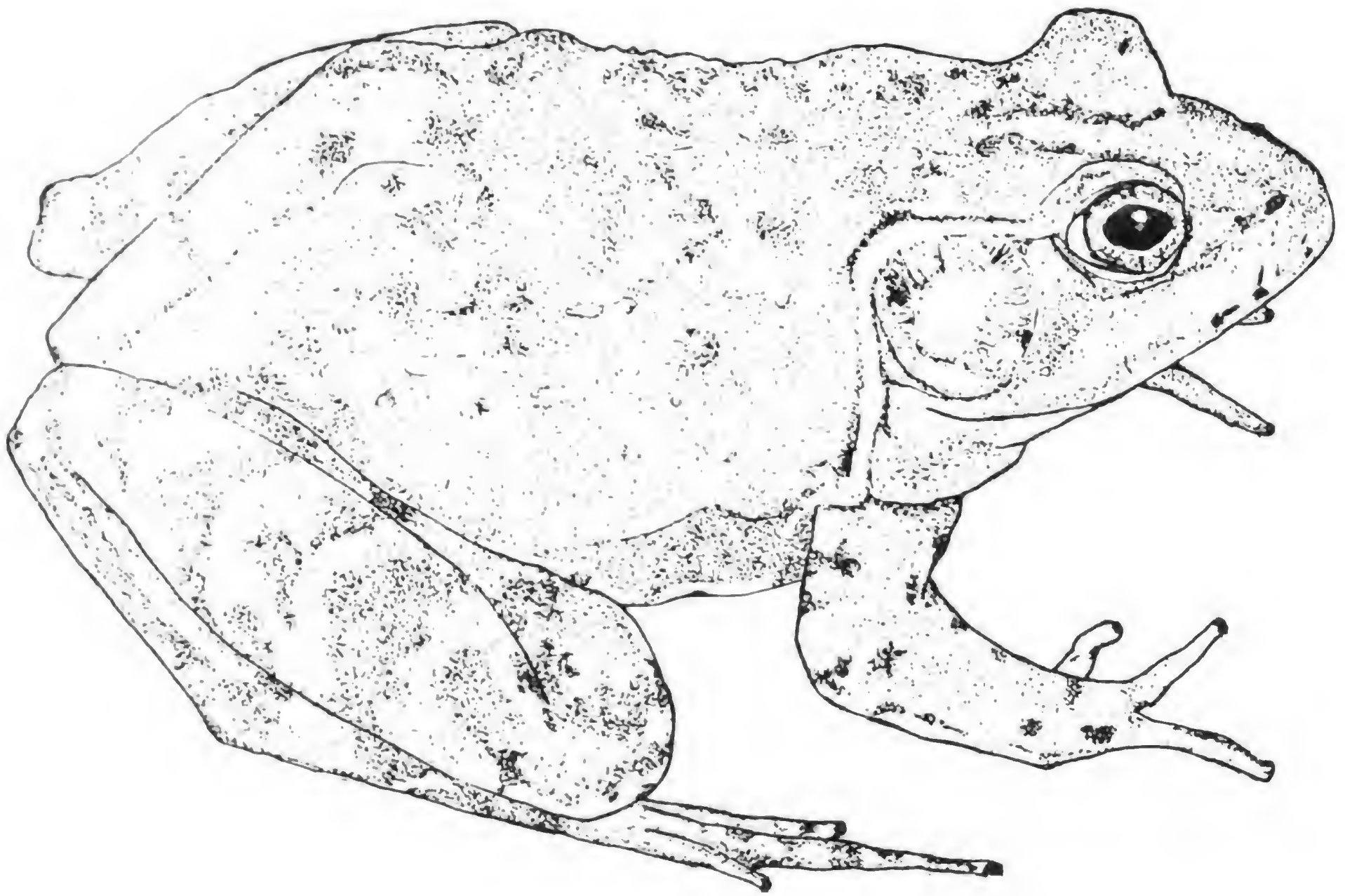


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BULLETIN INFORMATION

Catesbeiana, the Bulletin of the Virginia Herpetological Society, is issued twice a year by the Virginia Herpetological Society. Membership is open to all individuals interested in the study of amphibians and reptiles. Dues are \$5.00 per volume year for adults, \$3.00 for individuals under the age of 18, and \$7.50 for families. Membership includes one subscription to Catesbeiana. Dues are payable to: Ben Greishaw, VaHS Treasurer, 7622 Hollins Road, Richmond, VA 23229. Herpetological societies desiring exchange of publications should send copies of their publications to: Dr. Joseph C. Mitchell, Dept. of Biology, University of Richmond, Richmond, VA 23173. Any materials for publication should also be sent to Dr. Mitchell.

MEETING NOTICE

The spring meeting of the VaHS will be held at Radford University on April 23, 1983. See page 22 for the details.

Cover: Rana catesbeiana by Christopher A. Pague.

EDITORIAL POLICY

Catesbeiana replaced the formal name of the Bulletin of the Virginia Herpetological Society in 1981 as the publication of the VaHS to reflect the changes in the society's structure. Although the format of the bulletin changed dramatically, its adherence to the central theme of the science of Virginia herpetology has remained firm. Beginning with the editorship of F. J. Tobey (1958-1980) and continuing with D. A. Merkle (1981-1982), the bulletin has published with few exceptions, only scientific information and news on the herps of Virginia. We will maintain that tradition. During several meetings in 1980 and 1981, brief discussions addressed this point. It was agreed that Catesbeiana will publish articles pertaining to herpetology outside of Virginia only if insufficient material is on hand to complete an average size issue (about 18 pages). In this vein, articles pertaining to species found in Virginia will take precedence over those which do not. Rarely, if ever, will articles be reprinted in Catesbeiana after they have been published elsewhere. If someone is unsure whether something he/she has is appropriate, he or she should contact the editor.

Authors may wish to submit articles in final copy-ready form. To maintain consistency, the type is IBM Letter Gothic (with 12 characters per inch), using a carbon ribbon; all margins are 1 inch, leaving the pages unnumbered. Consult the style of articles in this issue for additional information. Please be advised, however, that articles are usually reviewed by at least one officer (past or present) of the VaHS in addition to the editor. All changes must be approved by the author before publication. Thus, manuscripts, in final copy or not, should be submitted well in advance of March or September.

Reprints of articles are not available to authors; however, authors may reprint articles themselves to meet professional needs.

Herpetological artwork is welcomed. If the artwork has been published elsewhere, we will need to obtain copyright before we can use it in an issue. We need drawings and encourage members to send us anything appropriate, especially their own work.

SALAMANDERS FROM BURKE'S GARDEN, VIRGINIA

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The amphibian fauna of the high anticlinal bowl known as Burke's Garden¹ in easternmost Tazewell County, Virginia, was the subject of a short paper (Hoffman & Kleinpeter, 1948) published after a relatively brief experience with the area. As time passed, the frequency of visitation increased very substantially, and additional species were encountered. After three more decades, an updated summary of the salamander fauna can be justified, although knowledge of the anurans has not been correspondingly augmented in the same time period.

The region

Elongate, narrow ("canoe-shaped") anticlinal valleys are not uncommon in the Ridge and Valley Province of western Virginia, the result of erosion of the crust of breached anticlines and subsequent removal of highly soluble underlying limestones of lower Paleozoic age. Such valleys are typically high and cool, and eroded into Karst topography. Burke's Garden is structurally of the same form, but is unique in being the remnant of a large breached dome at the northeastern end of an anticlinal uplift, accounting for its oval shape and generous dimensions (approximately 5 by 8 miles in width and length). The valley floor is remarkably flat, virtually base-leveled at about 3100 feet ASL, although with several low ridges paralleling the long (east-west) axis of the bowl. All drainage now leaves the Garden through a deep water gap (Mill Gap) on the north side, but a rather low wind gap on the southwest edge bespeaks a former drainage connection with the upper Holston system through the present valley of Laurel Creek. By far the dominant surface rock is limestone (or dolomite) of upper Cambrian and Ordovician age. Springs, sinks, and caves are abundant and much of the drainage is subsurface. The geology and physiography of the region has been treated in detail by Cooper (1944).

Aside from the single water gap and several higher wind gaps, the bowl is enclosed by a complete ring of mountains which average about 3800 feet in elevation, and rise to 4705 feet at the westernmost edge to a promontory called "Beartown." This crest line is supported by a continuous outcrop of

¹The name Burke's Garden (properly spelled with an apostrophe "s") has little or no horticultural relevance, and originated from a remark made by a member of a hunting party encamped on a site utilized the previous year by James Burke, the first colonial visitor to the area. Burke's group had discarded potato peelings which took root and flourished, eliciting the later comment that the second party was encamped upon "Burke's garden."

Silurian sandstone (the Clinch formation) which is the dominant ridge-maker in much of the central Appalachians and often produces precipitous cliffs up to 50 feet in height around the perimeter of Burke's Garden.

The original forest cover has been long since removed from the inside of the bowl except for isolated woodlots and the steeper slopes. Presumably the oak-hickory-chestnut forest dominated at elevations below 4000 feet, and some old chestnut logs still remain, six decades after the devastation of the blight. Maples of several species are not uncommon and occasionally comprise copses of substantial extent at lower elevations. Above about 4000 feet, depending on the slope aspect, one encounters a mixed northern hardwood community that includes mountain maple, yellow birch, and buckeye. This assemblage is best defined on the east slope of Beartown, immediately below the sandstone cliffs, and in the wetter places contains also small stands of Rhododendron maximum, occasional magnolias, and tulip poplar. At one time the entirety of Beartown and much of the surrounding country about 4500 feet was clothed in a forest of red spruce, most of which was removed in the first half of this century (and the region routinely burned off). The present second-growth of scrubby oaks is a poor substitute for the majestic spruce forest, but some natural reseeding of spruce is commencing and one hopes that with continued protection against fire, a rejuvenated evergreen stand will reward future herpetologists for the arduous scramble to the top of Beartown (there being no foot trail). This location has been recommended for inclusion in the RARE system of wilderness reserves in the Jefferson National Forest, but it is nonetheless jeopardized by federal provisions which permit some exploration for minerals on even these pitifully small and few areas of great scenic and scientific value.

Since the majority of the valley floor has been converted into pasture and cropland, biological interest naturally centers upon the higher slopes about 3500 feet, but plenty of small woods and groves remain below, and the profusion of springs, caves, and sinkholes gives ample opportunity for the discovery of the spelerpine plethodontids in particular. Only the crests of the encircling mountains lie within the National Forest and therefore are readily accessible for field work. Elsewhere property rights must be scrupulously observed, and permission had from (in most cases) the local managers of the large land holdings. It has been my experience in 35 years of personal visits that local property owners uniformly evince friendly and intelligent interest in one's activities, once the amenities have been observed and explanations proffered.

Access to the Garden may be gained by the paved road (Va. Cty. Rt. 623) from State Route 61 at Gratton, and which continues as a fairly good (if multiswitchbacked) road across Garden Mountain and thence south to State Route 42 at Sharon Springs. An excellent Forest Service road leaves the eastern end of the bowl from Va. Hwy. 666, and connects with Va. Hwy. 615 just west of Bastian. Although unpaved, this road is scenic and well-kept, and is in fact the shortest means of access to anyone approaching from the east.

Explorations.

Personal interest in the fauna of Burke's Garden was catalyzed by a remark made by Dr. Austin H. Clark in 1946, that while collecting butterflies there he had seen " . . . a large plethodon with a golden

dorsal stripe." This was sufficient to stimulate a young herpetologist, and resulted in visits made by me and Hubert Kleinpeter in June of 1946 and 1947, a brief overnight stop on the first occasion and three days and nights on the second. Although Dr. Clark had pinpointed his locality very precisely on a USGS 15' quadrangle, we were unable to rediscover his creature there or elsewhere despite finding an appreciable number of other kinds of salamanders. Our results were published in 1948. Not long thereafter Dr. William D. Stull of Ohio Wesleyan University visited the region and collected some of the same terrestrial species, chiefly on Garden Mountain. In 1950, I took up residence at Blacksburg (moving to Radford in 1964) and found numerous opportunities to return to the Garden. Beginning around 1968 visits became more frequent owing to an interest in the arthropod fauna, and during the 1970s each season found me on the scene from once to five or six times. Dr. Richard Highton collected salamanders on Beartown on several occasions in the late 1960s, taking large series of the several kinds of Plethodon. Dr. Kraig Adler visited Burke's Garden in the summer of 1967, collected at Mill Gap and on Garden Mountain. Possibly other herpetologists have been there as well, but I have no record of their activity.

Dr. Adler's material has been deposited in the Museum of Zoology, University of Michigan; Dr. Highton's specimens are in his personal collection at the University of Maryland; anything taken by me is either at the National Museum of Natural History or destined to be placed there.

Collecting sites.

Some of the important collecting localities were described in our 1948 paper. These are recounted here briefly along with a number of others; all are indicated by numbers on the accompanying sketch map (Fig. 1). Visitors to the region will find the latest 7½" USGS quadrangles (Hutchinson Rock; Cove Creek; Garden Mountain) extremely useful for precise locations, elevation, and similar data.

(1) Mill Gap. This is the single active water gap and the lowest place in the Garden, at approximately 3000 feet. Drainage through the gap is through Wolf Creek, a tributary of New River. There are numerous nearly vertical outcrops of Clinch sandstone exposed along the highway right of way; in the gap itself the forest cover is dominated by Canada hemlock with an understory of rhododendron. Just inside the bowl is Gose Millpond, site of a former water mill; the impoundment extends back through open pasture in a sinuous course and provides the only local station for bullfrogs. Almost certainly newts occur in this pond, although none have so far been observed. A partially innundated spring along the edge of the millpond provides the only known local habitat for the mud salamander.

(2) Medley Valley. Scarcely evident as a topographic valley, this low depression extends along the south side of the Garden. Near its easternmost end, Plethodon richmondi was found to be extremely common in March 1954, chiefly under sticks and flat stones in an open pasture with scattered large trees. This site, on Va. Hwy. 625, varies across the road into a second growth woodland having a somewhat lowland aspect because of apparently native representation of Ilex opaca scattered in amongst the oaks and maples. Plethodon c. cinereus was found in this biotope.

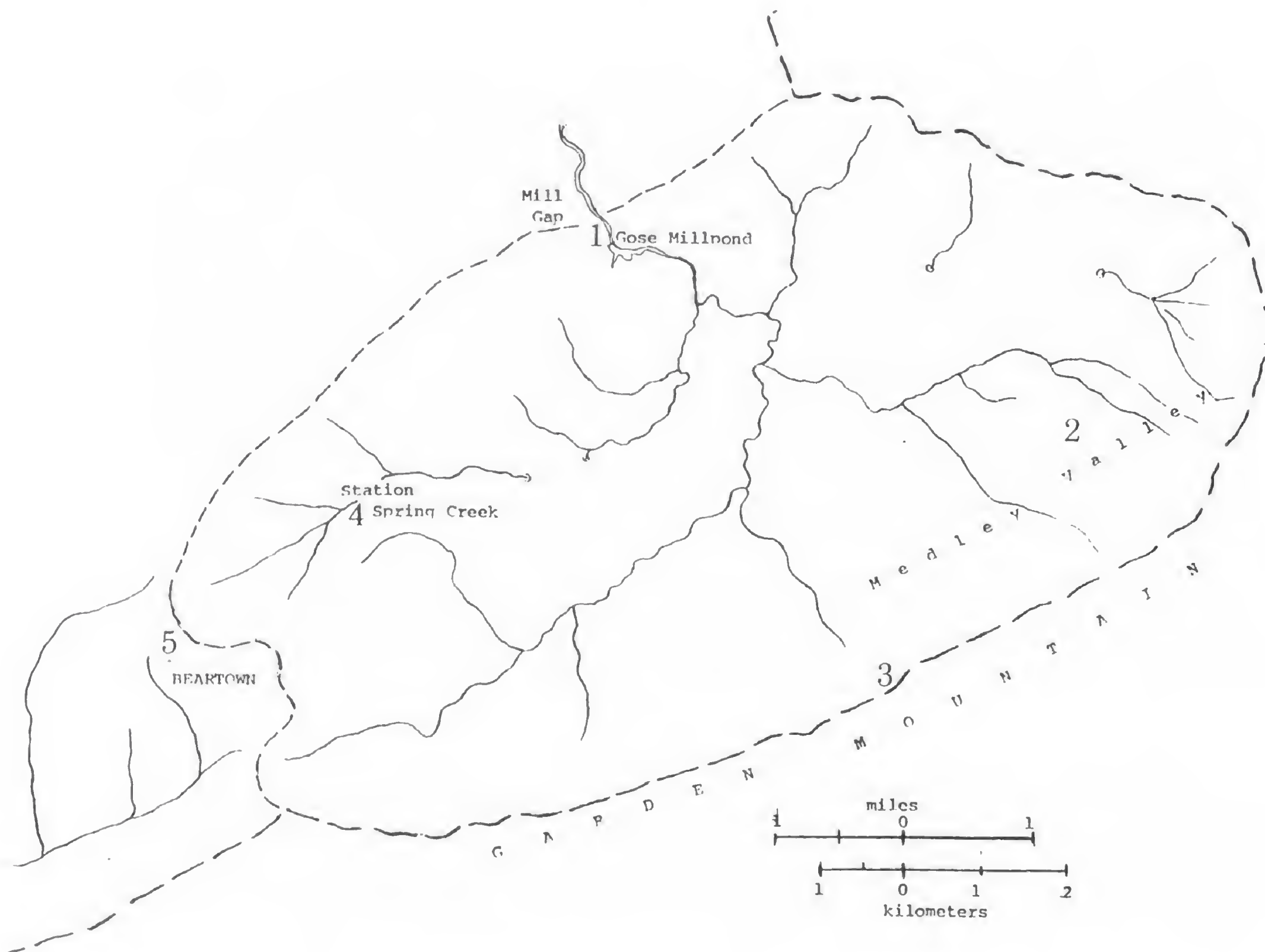


Figure 1. Outline map of Burke's Garden showing major surface drainage and collecting sites described in the text. The heavy dashed line is the boundary between Bland and Tazewell counties and closely follows the crest of Garden Mountain. The thin dashed line indicates the crest line of the northwest segment of the rim between Beartown and Mill Gap. Minimum elevation is 3000 feet at Mill Gap and maximum is 4705 at Beartown Mountain.

(3) Garden Mountain, forming the southern and eastern rim of the bowl, is a local segment of the more extensive Clinch Mountain, averaging about 4000 feet along the crest line. For most of its length, the north face of Garden Mountain shows a distinct sandstone cliff subtended by a moist northern hardwood forest in and over the talus blocks. The south slope is dramatically different, as the sandstone lies parallel to the slope and produces a typically dry aspect forested with oak and pine. The mountain is crossed by Va. Hwy. 623. On the north slope, near the base, the road crosses a number of all-year springs and seeps; at the top the locally interrupted cliff outcrop provides space for a convenient pull-off and easy access to the hardwood forest. All of the local species of Plethodon occur here, as does Aneides, and of course Desmognathus ochrophaeus abounds.

(4) Station Spring Creek, draining the westernmost surface of the bowl, is a small but permanent surface stream running for most of its length through open grassy fields until plunging into a cave (from which it emerges several hundred yards to the east as Station Spring). The dominant salamander in the lower reaches is D. monticola; higher up and in lateral tributaries and seeps one finds D. fuscus as well, while from the forest line upwards its bed literally teems with D. ochrophaeus. The adjacent springs are populated by Gyrinophilus larvae in some numbers, but in many years of rock-turning, no adult has yet been found. At its lower reaches the creek runs past a fairly extensive stand of mixed red maple and buckeye through which a feeder stream passes and creates a very rich damp habitat in which Eurycea bislineata and Pseudotriton ruber have been found (as well as the ubiquitous D. ochrophaeus).

The entire course of Station Spring Creek lies within the limits of the Moore Brothers Ranch, formerly known as Cassell Farm.

(5) Beartown Mountain. The extreme westernmost end of the bowl rises to a height of 4705 feet ASL, and this promontory (easily distinguishable from the valley floor by its thin fringe of dark spruce trees), is doubtless the single site of greatest biological interest. The east-facing slope has a rich diversity of northern plants (including the rare blue monkshood, Aconitum reclinatum Gray); in the spring the conspicuous flower heads of ramps (Allium oxycoccum) are spectacular. The original spruce forest has long since been logged off but a small stand of large trees occupies the highest point, and appreciable natural rejuvenation is evident. On the north side of Beartown, the headwaters of Cove Branch drain a large sphagnum bog (nearly one-half mile in length) which must be inhabited by Hemidactylum although two fairly concerted efforts to find specimens were unsuccessful. Three of the local plethodons (e.g., P. cinereus, P. glutinosus, and P. jordani) have been found in great abundance on Beartown but not so far, to the best of my knowledge, has P. richmondi been obtained there.

Biogeographic notes

Although located in the Ridge & Valley physiographic province, Burke's Garden is geographically juxtaposed, northwesterly, to the Iron Mountains of the Southern Section of the Blue Ridge Province. Many kinds of cold-adapted organisms cross over in their distribution pattern from the high country of central West Virginia to the great Blue Ridge ranges in this part of Virginia, and are found nowhere else in the state. Some others are

neoendemics in the Southern Blue Ridge but extend northward into Virginia as far as Burke's Garden or slightly beyond. The regional fauna of salamanders can be analyzed into several geographic groups that reflect the biogeographic diversity evident also among flowering plants, diplopods, and ground beetles. Uncertainty about the taxonomic status of several species and subspecies detracts from their significance in these groupings, and some modifications of the present arrangement may be in order when the respective taxonomies have been worked out.

Group I. Species which are relatively widespread in Virginia and nearby states, with little or no evident altitudinal restrictions:

Desmognathus fuscus fuscus
Plethodon cinereus cinereus
Plethodon glutinosus glutinosus (in the ante-Highton sense)
Eurycea bislineata (subspecies?)
Eurycea longicauda longicauda
Pseudotriton ruber (subspecies?)

Group II. Species of boreal or upland affinity, occurring in Virginia only in the western counties and typically above 2000 feet:

Desmognathus monticola monticola
Desmognathus ochrophaeus

Group III. Species virtually endemic to the Southern Blue Ridge, but occurring in Virginia on Clinch and East River mountains and some adjacent smaller ranges:

Plethodon jordani (in the current usage of that name)

Group IV. Species occurring at low to moderate elevations (ca. 1500 to 4000 feet), whose ranges lie chiefly west of Virginia (Burke's Garden therefore at or near the eastern periphery):

Plethodon richmondi
Aneides aeneus
Eurycea lucifuga
Gyrinophilus (species?)

Group V. Species basically restricted to the Coastal Plain in Virginia although occurring in the southwestern counties at low elevations, as well as in Kentucky and West Virginia:

Pseudotriton montanus (subspecies?)

Detailed remarks on the distributional affinities of the various taxa are to be found within the specific accounts that follow. The content of the foregoing groups is almost certain to be augmented by the eventual discovery of some forms whose occurrence in Burke's Garden seems highly probable. A list of these species is presented herewith, its ranks, to be hoped, decimated by the efforts of future collectors.

Probable Additional Species

1. Ambystoma jeffersonianum (Green). Recorded from Wythe County (old USNM specimen); found by me at Dublin, Pulaski County, 35 miles due east of Burke's Garden, and not uncommon at Radford, 40 miles east.

2. Ambystoma maculatum (Shaw). This species is sporadic but widespread in western Virginia and should be found in the Garden.

3. Notophthalmus v. viridescens Rafinesque. As this species is statewide in Virginia and occurs abundantly at, e.g., Mountain Lake (3800 feet), it seems a highly probable member of the Garden's fauna. It is curious that such a conspicuous species has not yet been detected (at Gose Millpond, for example).

4. Cryptobranchus alleganiensis (Daudin). Widespread and abundant in most streams of the New River system, the hellbender doubtless occurs in Wolf Creek at least as far as Mill Gap. Inquiries of local anglers that frequent the Gose Millpond have not, however, elicited any evidence that this species is taken by hook in that impoundment as it often is elsewhere.

5. Desmognathus quadramaculatus (Holbrook). So far not taken in Burke's Garden per se, the black belly salamander has been found less than 10 miles away in the western part of Wythe County and at a like distance in Cove Creek, eastern Tazewell County, Va. Hwy. 61. Yet this species has been the object of special search for over three decades, and its absence from the Garden may in fact be more real than apparent.

6. Plethodon wehrlei Fowler & Dunn. I have (1967) discussed the occurrence of this species in Virginia, and subsequent finds have not greatly altered the distributional picture presented then. P. wehrlei has been found less than 30 miles east of Burke's Garden, and there seems no reason why it should not be common there. Perhaps a closer attention to different biotopes in early spring and late fall will be fruitful.

7. Hemidactylium scutatum (Schlegel). The four-toed salamander is almost certainly a member of the local fauna, having been found at comparable elevations to the north in Giles and Alleghany counties. An extensive sphagnum bog on the headwaters of Cove Branch (Beartown region) appears to be the most likely source of material.

Annotated List of Species

1. Desmognathus fuscus fuscus (Green). Not infrequent in seepage areas and springs: Mill Gap, Beartown, Station Spring Creek, Garden Mountain.

2. Desmognathus monticola monticola Dunn. Occurs with the preceeding, and alone in larger streams, such as Station Spring Creek up to about 4000 feet; also very abundant in the small, cool, rhododendron-shaded streams crossed by Va. Hwy. 623 on the south slope of Garden Mountain.

3. Desmognathus ochrophaeus Cope. Already noted (Hoffman & Kleinpeter, 1948) as the most abundant salamander at Burke's Garden, this species occurs as low as 3000 feet but becomes increasingly abundant with increasing elevation, and on the east slope of Beartown is found under nearly every stone and log in damp places. Also very common on the north-facing slope of Garden Mountain. By far the greatest number of individuals exhibit the straight-edged dorsal band formerly utilized to distinguish a nominate species.

4. Plethodon cinereus cinereus (Green). Generally distributed over the entire area, common on the surface during the spring and fall months, more often occurring in caves and sinks during the summer. From Mill Gap (3000 ft.) to the top of Beartown (4705 feet); often in fairly dry situations.

5. Plethodon glutinosus glutinosus (Green). The local population is marked with metallic dorsal spots. Common on Beartown and Garden Mountains, frequent

elsewhere, at lower elevations, in parches of woodland. So far, not seen by me in caves.

6. Plethodon jordani Blatchley. With the above, common in moist northern hardwoods and the remnants of spruce forest on Beartown. Occasionally noted at much lower elevations, e.g., in red maple woods, 3100 feet, on the Moore Brothers Ranch, and 3000 feet in hemlock-rhododendron, in Mill Gap. Beartown was the first place this species was found outside the Blue Ridge province; subsequently Dr. Highton located populations to the north, in Bland and Giles counties, and I found it south on Clinch Mountain, Washington County, west of Abingdon.

7. Plethodon richmondi Netting & Mittleman. Infrequent, but occasionally found in fair numbers in early spring. In late March, 1954, I found many specimens under logs and stones in the eastern end of Medley Valley; this and other Virginia records were published in 1954 along with some notes on prodigious feats of ingestion. On several later occasions specimens of this species have been found in the moist hardwood forest on Garden Mountain, but only during the cooler months (May, October). Apparently it is rare on, or absent from, Beartown. Although obviously hypogaeal during the summer, I have so far not observed P. richmondi in caves.

8. Aneides aeneus Cope. The abundance of this species in adjacent regions of West Virginia made it almost certain that it occurred in Burke's Garden. Yet intensive search over many years, in highly likely habitats (such as sandstone cliffs on Garden Mountain, examined even on warm rainy nights) was unsuccessful until 1963. On August 9 of that year, a small party of biologists made a brief stop on the crest of Garden Mountain primarily to allow a foreign visitor to dig in the leaf litter for myriapods. During this activity Dr. J. E. Carico, then a graduate student at VPI & SU, pulled some rock-lettuce lichen (Gyrophora sp.) off the cliff face and disclosed two small specimens of A. aeneus at a locality that I had searched in vain repeatedly. A decade later, members of several ecology field trips from Radford University, led by Dr. E. V. Gourley, found the species in roadside outcrops in Mill Gap, and Dr. Kraig Adler was also successful there during his visit in 1967. No further specimens have been found at the Garden Mountain site, however, despite a lot of lichen-pulling, during repeated searches.

I believe that Burke's Garden is the easternmost station for A. aeneus, being about 30 miles northeast of Fowler's locality above Brumley Gap in Washington County (1947). Surely, however, the species must be more widespread than the few records would indicate. It might be added here that the eventual discovery of A. aeneus in the Garden solved the mystery of Dr. Clark's "golden-backed" plethodon, which was a stray member of the Mill Gap population.

9. Gyrinophilus sp. Despite the many years of search in springs and seeps, no adult gyrinophilids have been found by me subsequent to that taken in 1946 in Lawson's Cave. This poverty of material is surely the reflection of inappropriate collecting techniques.

Our specimen (1948:605) was reported under the name G. porphyriticus inagnoscus as it matched closely the photograph of that taxon published by Mittleman (1942), and differed appreciably by its herring-bone pattern from gyrinophilids found farther north in Virginia. Subsequently G. p. inagnoscus was considered to be part of an immense population of salamanders intermediate between G. p. porphyriticus and G. p. danielsi by Brandon (1966). It is difficult for me to believe that the final word has been written on the classification

of this genus. Adults from Burke's Garden will certainly be important in the formulation of future opinion on this subject, but their accumulation will doubtless require far more cave collecting than I have been able to pursue.

10. Pseudotriton montanus subsp.? For many years all evidence seemed to suggest that this species had been misnamed, as virtually all of the eastern localities were in or quite near the Atlantic Coastal Plain, and those in the interior (considered to be inhabited by a different subspecies, P. m. diastictus Bishop) were at quite low elevations as well. It was therefore with no small astonishment that I found two large adults under a submerged plank in a muddy spring beside Gose Millpond on March 20, 1954. This site is at almost exactly 3000 feet, and no other known locality for P. montanus is anywhere near this elevation. The specimens were captured and preserved, but subsequently lost during a move from Blacksburg to Radford. However, a half-grown individual was found at the same place August 8, 1968, and another adult on September 1, 1979; both of these specimens are deposited in the USNM collection to verify the record.

P. montanus may not really occur at South Mountain, Pennsylvania (the ostensible type locality), but it certainly does occur high in the mountains of southwestern Virginia. The evidence adduced so far in support of two subspecies seems, in my opinion, to be highly equivocal and a new investigation of the entire genus merits a high priority. On biogeographic grounds, the Burke's Garden population would doubtless be referable to P. m. diastictus, if that name can be substantiated.

11. Pseudotriton ruber subsp. Red salamanders are not common in the Garden. I found one on the east slope of Garden Mountain on June 28, 1952 that was subsequently reported (1955) as P. r. nitidus Dunn. On March 20, 1954, another was found in the spring at Gose Millpond where the two P. montanus were uncovered, and this specimen (regrettably lost at a later time) appeared more similar to nominate P. r. ruber. Finally a nearly adult specimen was found in a spring run on the Moore Brothers Ranch in late August, 1979. This individual could be referred to either subspecies. As long as so few specimens are available, and since the validity of the named subspecies of P. ruber has not been carefully examined in recent years, any attempt to categorize the Burke's Garden population subspecifically would be very premature.

12. Eurycea bislineata subsp.? Recorded in our 1948 paper under the trinomen E. b. wilderae, on the basis of three specimens only. Two-lined salamanders are generally hard to find in the Garden during the summer, but I was fortunate in obtaining about twenty large adults along a small tributary to Station Spring Creek on August 28, 1979 (cool weather comes early at 3000 feet!). In terms of costal groove count and color pattern, the majority of these salamanders appear similar to the nominate subspecies as it occurs in northern and western Virginia. However, until the course of current systematic studies on the E. bislineata group has been completed, any speculation on the subspecies (or specific!) identity of the Burke's Garden population is fruitless. Protein analysis techniques will doubtless have to be invoked for an eventual settlement.

13. Eurycea longicauda (Green). Recorded from Cassell Farm Cave in our 1948 paper, and subsequently seen there on several occasions. One also found at the Gose Millpond spring, July 31, 1979. Considering the enormous number of logs and stones turned during the past 30 years, the scarcity of this species is noteworthy.

14. Eurycea lucifuga Rafinesque. Originally discovered in Cassell Farm caves by Dr. C. E. Mohr in 1941 (Fowler, 1944) the Cave Salamander was found at the same site by Kleinpeter and me during our 1947 visit, but I have never seen one since at that or any other site. Burke's Garden is, of course, nearly marginal on the easternmost edge of the species' range.

Acknowledgements

Mr. Dennis M. Cassell, now deceased, kindly granted permission for my early exploration of his property, and the same courtesy was extended in later years by the owners and local managers of the same land under the present name Moore Brothers Ranch. Dr. Kraig Adler kindly supplied a list of species that he found at Burke's Garden in 1967, and my colleague, Dr. E. V. Gourley, has shown me the various specimens taken by members of his ecology field trips. A considerable spectrum of students, colleagues, and friends have provided companionship and sometimes useful help on collective forays. To all of the foregoing individuals and parties, I express my best thanks.

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REPTILES AND AMPHIBIANS OF THE DIORITIC SECTION OF THE
GREEN SPRINGS IGNEOUS INTRUSION, LOUISA COUNTY, VIRGINIA

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The Green Springs igneous intrusion (an area of volcanic lava of subterranean origin) is located in westcentral Louisa County, Virginia, southeast of Boswell's Tavern. Its dioritic section is exposed over about 14,000 acres. Land use is over 75% agricultural, with the rest in varied woods, fallow fields and a few oldfields. Over 90% of the agricultural land is in pastures, hayfields, and cornfields.

Herptile observations and collections in this area were made intermittantly between 1975 and 1982. Approximate geographic boundaries are the South Anna River to the north and east, US Rt. 15 to the west and an imaginary line from the intersection of VA St. Rts. 626 and 640 west to the intersection of US Rt. 15 with Camp Creek. About 200 hours of field work were specifically devoted to work on the herpetofauna, but herptiles were also observed and collected during more than 5000 hours of field work oriented primarily towards production of an account of the avifauna of the same area. Also included here are driving surveys at night to census calling anurans.

A few of the species described below have been observed only in the area slightly (up to 400 meters) west of the western edge of the intrusion but are included here since the species involved must surely also occur on the intrusion. Including these, 29 species of herptiles have been positively identified for the intrusion so far. Abundance quotations below are obviously rather subjective but are intended to be internally consistent between species. Thus, a "very uncommon to rare" species should be present in lower total numbers than an "uncommon" species, etc.

It appears, from perusal of field guides and Virginia Herpetological Society (VaHS) publications, that up to 25 additional species of herptiles might be expected to occur on the intrusion. Some have undoubtedly been overlooked because of their secretive habits but the lack of others to date is surprising, especially as specific searches have been made for several of them. It is likely, though, that over 275 years of habitation and farming have sharply reduced the herpetofauna of the area. Few original habitats seem to remain on the intrusion and species missed so far may well occur in less disturbed habitats nearby.

All specimens collected have been or will be conveyed to the VaHS for eventual deposition in the National Museum of Natural History. Copies of all photographs (slides) have been or will be conveyed to the VaHS.

Annotated Species List

Snapping Turtle (Chelydra serpentina). Regular and uncommon to fairly common in the ponds and small lakes on the intrusion.

Stinkpot (Sternotherus odoratus). Known only from the attached carapace and plastron of a dead, decomposed individual found on 9 April 1978 on the wooded floodplain of the South Anna River at the eastern edge of the intrusion.

Eastern Mud Turtle (Kinosternon s. subrubrum). Found only near the southwest end of Nolting Pond (two miles southeast of Boswell's Tavern), where one was found in an alder swamp on 19 May 1978 and another was found (and collected)

in adjacent shallow, standing water on 3 June 1982.

Spotted Turtle (Clemmys guttata). Known from three observations at three locations: 1) one in a red maple swamp along Millington Creek in the northeast corner of the intrusion on 4 March, 1976, 2) one in a marshy area west of Hawkwood Lake (about four miles south of Boswell's Tavern at the western edge of the intrusion) on 21 April 1976, and 3) one in the alder swamp at the southwest end of Nolting Pond on 17 May 1978.

Eastern Box Turtle (Terrapene c. carolina). Fairly common over all of the intrusion in all habitats. It has been found as early as April 7 (1976) and as late as November 7 (1975). Several slides have been taken.

Eastern Painted Turtle (Chrysemys p. picta). Common in all ponds and small lakes on the intrusion and also present in slower-flowing areas of some of the larger streams. It has been found as early as March 19 (1978) and as late as October 22 (1978). A partial skeleton was collected on 20 May 1982 and a photograph taken on 17 June 1976. A female laying eggs was found along Hawkwood Lake on 29 June 1982 and the complete clutch of seven eggs collected later that day.

Northern Fence Lizard (Sceloporus undulatus hyacinthinus). Apparently uncommon in and near woods in the area just west of the intrusion, but not encountered elsewhere. A female was collected from this area on 26 June 1982.

Five-lined Skink (Eumeces fasciatus). Status not certain because of the likelihood of field confusion with E. inexpectatus. However, a specimen collected at the edge of a deciduous woods just west of the intrusion on 5 May 1982 proved to be E. fasciatus. Either or both of these species are fairly regular around old buildings, piles of wood, etc. on the intrusion but their status is best described as rather uncommon.

Northern Water Snake (Nerodia s. sipedon). Fairly uncommon across the intrusion but fairly regular wherever trees or shrubs adjoin ponds and small lakes.

Northern Brown Snake (Storeria d. dekayi). One record. An adult found in bales of hay in a blown-down barn near the west edge of the intrusion was collected on 18 April 1982.

Eastern Garter Snake (Thamnophis s. sirtalis). Uncommon in a wide array of habitats across the intrusion. One found chasing (and nearly swallowing) a Fowler's Toad in a yard near the west edge of the intrusion on 11 July 1982 was preserved.

Eastern Ribbon Snake (Thamnophis s. sauritus). One positive record. A road-killed specimen found in a farm road in upland hardwood forest just west of the intrusion was collected on 5 August 1982. At least one other Thamnophis thought to be this species has been noted on the intrusion.

Eastern Hognose Snake (Heterodon platyrhinos). Two records. One was found crossing Route 636 near the northeast corner of the intrusion on 6 October 1975 and another was found swallowing a Fowler's Toad beside a cabin just west of the intrusion on 20 July 1982.

Northern Black Racer (Coluber c. constrictor). Two records. One was found road-killed on Route 22 in the northern section of the intrusion on 17 October 1978 and another was found in the marshy area just west of Hawkwood Lake on 30 April 1982.

Rough Green Snake (Opheodrys aestivus). One record. One was found barely alive after being run over by a tractor in a farm road adjacent to both a hardwood forest and a thicketed fenceline beside a hayfield at the western edge of the intrusion on 12 May 1982. It was preserved.

Corn Snake (Elaphe g. guttata). One definite record. One was found on Route 638 in the central part of the intrusion on 8 November 1978.

Black Rat Snake (Elaphe o. obsoleta). Apparently the most common snake on the intrusion, it has been found throughout in a wide array of habitats. The largest seen measured as 5.5 feet long. Extreme dates are March 11 (1978) and November 8 (1978). One was photographed on 1 June 1976.

Mole Snake (Lampropeltis calligaster rhombomaculata). One was found on 17 August 1976 in a yard in the northeast corner of the intrusion. This was during a severe drought when the ground was very hard and dry. These conditions may have helped bring the snake to the surface.

Red-spotted newt (Notophthalmus v. viridescens). Apparently very common and local on the intrusion. The species is known only from wooded areas of a property in the northeast corner and from the marshy area just west of Hawkwood Lake. On 1 December 1976 at least 12 were seen through more than an inch of glassy ice in a game pond on the former property!

Red-backed Salamander (Plethodon c. cinereus). Very uncommon or rare and local--presumably because of habitat restrictions. Always found in or immediately adjacent to wooded areas. Presently known locations: 1) a loblolly pine plantation in the northeast corner of the intrusion, 2) a hardwood deciduous forest just west of the floodplain of the South Anna River near the eastern edge of the intrusion, and 3) a yard and adjacent deciduous forest just west of the intrusion. No more than six individuals have been seen so far -- equally divided between "red-backs" and "lead-backs."

American Toad (Bufo americanus). Quite uncommon and probably somewhat local. Choruses are very scattered along ponds and rarely seem to exceed 15 to 20 individuals. Extreme dates of calling are March 12 (1977) and May 28 (1982), although an emerged individual was seen on March 4 (1976).

Fowler's Toad (Bufo woodhousei fowleri). Fairly common, the most common toad on the intrusion. Choruses are never very large but are regularly spaced along ponds and small lakes. Nonbreeders have been seen throughout in a wide array of habitats. Extreme dates of calling are April 11 (1977) and July 27 (1977). Two specimens were collected in 1982.

Northern Cricket Frog (Acris c. crepitans). Common. Choruses occur along ponds, small lakes, rainpools and the slower stretches of many of the streams on the intrusion. In 1982 a few individuals were also occasionally heard calling in high, dry areas well away from water in the area just west of the intrusion. Extreme dates of calling are April 11 (1977) and July 27 (1977). Several specimens were taken in 1982.

Spring Peeper (Hyla crucifer). Common. Calling locations same as for A. c. crepitans. These two species are probably the most common herptiles on the intrusion. Extreme dates of calling are March 2 (1977) and November 14 (1978). Choruses are largest from mid March through April, decline to almost nothing during the summer and increase again in September and October (though never to the levels of early spring). A specimen was collected in tall weeds along a deciduous forest well away from water on 1 August 1982.

Gray Tree Frog (Hyla versicolor). Generally uncommon but present wherever there are trees. It is most common in deciduous woods, with the largest choruses occurring along ponds adjacent to these woods. Scattered individuals also call directly from trees and woods. Extreme dates of calling are April 2 (1977) and October 12 (1976), although calling usually does not start before mid to late April. Pictures were obtained on 23 August 1976 and a specimen on 5 August 1982.

Upland Chorus Frog (Pseudacris triseriata feriarum). Rather uncommon to almost rare, but widely scattered. Choruses are heard along ponds, small lakes and rainpools throughout but never seem to exceed five to eight individuals. Extreme dates of calling are March 3 (1976) and April 9 (1976).

Bullfrog (Rana catesbeiana). Generally uncommon but regular. Choruses occur along many ponds and small lakes but rarely seem to involve over 15 to 20 individuals. Extreme dates of calling are April 13 (1977) and August 7 (1976).

Green Frog (Rana clamitans). Uncommon to fairly common along ponds, small lakes and the slower stretches of the larger streams on the intrusion. Extreme dates of calling are April 12 (1977) and August 13 (1976). However, calling usually does not begin until early May.

Southern Leopard Frog (Rana utricularia). I identified the leopard frogs found on the intrusion as northern leopard frogs (R. pipiens) during much of my study as I mostly worked from the 1958 edition of Conant's (1975) field guide. However, I am now assuming all of them to be R. utricularia as a result of a later revision of that field guide (1975). The species is uncommon along ponds and small lakes and also regularly found along slower stretches of the larger streams and in various (usually grassy) habitats away from water.

Literature Cited

Conant, R. 1975. A field guide to reptiles and amphibians of eastern and central North America. Houghton Mifflin Co., Boston, 429 p.



FIELD NOTES

This section provides a means of publishing natural history information on Virginia's amphibians and reptiles which does not lend itself to full-length articles. Observations on geographic distribution, ecology, reproduction, phenology, behavior and other areas are welcomed. Reports can be on a single species, groups of species or fauna from selected areas, such as a state park or county. The format for these reports is TITLE (species or area), COUNTY and LOCATION, DATE OF OBSERVATION, OBSERVERS, DATA AND OBSERVATIONS. Names and addresses of authors should appear one line below the report. Consult published notes or the editor of this section if your information does not fit this format.

If the note includes information on geographic distribution, a voucher specimen or color slide should be taken for verification and deposited in a recognized museum or sent to this editor. Species identification for observational records should be verified by a second person.

Send records (double spaced, typed) or inquiries to Dr. Joseph C. Mitchell, Dept. of Biology, University of Richmond, Richmond, VA 23173.

The correct citation is: Pague, C. A. and B. J. Larson. 1982. Field notes: Oconechee State Park. Catesbeiana, Bull. Virginia Herpetol. Soc. 2(2):12.

* * * * *

Scaphiopus holbrooki (Eastern Spadefoot): City of Suffolk, Virginia: 0.5 miles SW of Oakland or 1.5 miles SW of Chuckatuck on VA Rt. 603. 2 February 1983. Christopher A. Pague.

On February 2, 1983, the winter weather temporarily broke with a low pressure system slowly moving across the state. With it came rain, approximately 0.25 inches prior to nightfall. The night brought a few showers and an air temperature of 12.8° C (55° F). Southern leopard frogs (Rana utricularia), spring peepers (Hyla crucifer), and Brimley's chorus frogs (Pseudacris brimleyi) were found crossing rural roads near potential breeding sites. At the above locality I stopped to examine what I thought was a toad. Upon capture it was found to be a gravid spadefoot toad (Scaphiopus holbrooki) (SVL=64.2 mm). This being an unusual find in February, I examined the nearby ditches and road and found no other living examples, but three very flattened roadkills were identified as spadefoot toads by their characteristic dorsal skin. This is the earliest activity date of which I am aware for this species in Virginia.

W. Leslie Burger (1957. Va. Wildlife 18(8):8-9, 22-24) found spadefoot toads breeding March 22, 1957 in Northampton Co., VA. A. H. and A. A. Wright (1949. Handbook of frogs and toads) described the breeding season throughout the range as March through September. My field notes and the literature show spadefoot toads breeding after heavy rain. The rain on February 2nd was not particularly heavy and so the emergence of a gravid female at this early date is doubly interesting.

Christopher A. Pague. Lafayette Zoological Park, Norfolk, VA 23504

NEWS AND NOTES

New VaHS Secretary and Editors: During the October 19, 1982 meeting, the membership elected the following officers: reinstated were Bob Bader as President, Jack Brooks as Vice President, and Ben Greishaw as Treasurer. Chris Pague (Lafayette Zoological Park, 3500 Granby St., Norfolk, VA 23504) was elected secretary and Joe and Wendy Mitchell (Dept. of Biology, Univ. of Richmond, Richmond, VA 23173) were appointed as the new coeditors of Catesbeiana.

All of the society's members wish to convey to Don Merkle our thanks for getting the bulletin off the ground, establishing its basic format and getting the material together on time. Comments from others (nonmembers) indicate that Catesbeiana is well accepted in its new form and we wish to recognize Don's efforts towards that.

Constitution: In the meeting on October 19th, the constitution of the VaHS was accepted by majority vote with the following typographical corrections: Catesbeiana 2(2). pg. 7; line 1: "A Founding Member of ESHL", line 5: "(or a designee) will be the", line 9: "shall be named", line 10: "is unable", line 18: "black rat snake."

F. J. Tobey Library Donations: The VaHS extends its gratitude to Frank Tobey for the donation of the following items from his personal library to the VaHS library:

Journal of Herpetology	1968-1980,	Vols. 1-14	
HISS News-Journal	1973,	Vol. 1	
HISS Titles and Reviews	1973,	Vol. 1,	Nos. 1 & 2
Herpetological Review	1968-1969,		Nos. 4-9
	1970-1981,	Vols. 2-12	

Atlantic Ridley in False Cape State Park: The 7 February 1983 Richmond Times-Dispatch carried an article about a juvenile Lepidochelys kemp which had stranded on the beach at False Cape State Park in January 1983. Richard Byles at VIMS is caring for the approximately 15 pound turtle and will release it, with a radio transmitter attached, sometime this summer. The Atlantic Ridley is the most endangered of the sea turtles; only about 400 - 600 females are left.

Back Bay - False Cape: In January 1983 the Final Impact Statement was issued on the controversial land exchange and access corridor proposal between U.S. Back Bay Nat. Wildlife Refuge and False Cape State Park. Final recommendations include a hardsurface road to be built behind the dunes for public transportation access to False Cape St. Park from May 15 to Sept. 15. Up to 2000 people per day would be brought to False Cape. In exchange, Back Bay would be given a portion of land at the southern end of the park. The U.S. Congress and the Virginia General Assembly must approve the land exchange and road construction. Given the unique herpetological community of the area and that this is the only area in Virginia where Ophisaurus ventralis is known to occur, Chris Pague and Joe Mitchell wrote letters challenging the previous proposals. If you are interested in this problem, contact Chris Pague.

ANNOUNCEMENTS

Forthcoming Meetings:

VIRGINIA HERPETOLOGICAL SOCIETY, 23 April 1983, Radford University, Radford, VA. Dr. Charles M. Neal (Chairman). See directions on pg. 22.

North Carolina Herpetological Society, 16 April 1983, Charlotte Nature Museum, Charlotte, NC. Registration 9 - 10 am, Tour 10 - 12, Lunch 12 - 1:30, Business Meeting 1:30 - 2, Papers 2 - finish.

Observations of Costa Rican Crocodiles - Mauley Fuller

Medical Management of Snakebite - Dr. R. E. Wase

Hylid Observations Using an Outdoor Enclosure - Dr. A. J. Bullard, DDS

Status of the Bog Turtle in the Southern Appalachians - Dennis Herman

Society for the Study of Amohibians and Reptiles and Herpetologist's League (SSAR/HL), 7 - 12 August 1983, The University of Utah, Salt Lake City, UT. Dr. John M. Legler (Chairman).

American Society of Ichthyologists and Herpetologists (ASIH), 19 - 24 June 1983, Florida State University, Tallahassee, FL.

Summer Herpetology Courses:

Mountain Lake: During the second term (July 18 - August 20) at the Mountain Lake Biological Station, a course entitled "Vertebrates of the Southern Appalachians" will be taught by a team of vertebrate zoologists from Florida State University and the University of Virginia. Dr. Joseph Travis will be responsible for introducing students to the amphibians and reptiles, Dr. Arthur Bulger will cover fish, while Dr. Jerry Wolff will take the mammals. Although birds will be the subject of a separate course taught during the first term (June 12 - July 16) by Dr. David Johnston from George Mason, Dr. Wolff will also introduce them into his portion of the vertebrate course for completeness. For further information write to: Dr. J. J. Murray, Jr., Director, Mountain Lake Biological Station, Gilmer Hall, University of Virginia, Charlottesville, VA 22901.

Highlands Biological Station: During June 6 - July 8, 1983, "Salamanders of the Southern Appalachians" will be taught by Dr. Stephen G. Tilley (Smith College). The course is offered at the undergraduate-graduate level and carries 6 semester hours. For further information write to: Highlands Biological Station, P. O. Box 580, Highlands, NC 28741.

RECENT VIRGINIA LITERATURE

- Berven, K. A. 1982. The genetic basis of altitudinal variation in the wood frog Rana sylvatica. I. An experimental analysis of life history traits. Evolution 36(5):962-983.

Populations of R. sylvatica were studied in Rockingham Co., VA (mountain) and Prince Georges Co., MD (lowland) to document the magnitude of the variation in life history traits. Mountain populations consisted of females with larger body sizes and delayed ages of first reproduction than females in lowland populations. Large females laid larger clutches and larger eggs than small females. Reciprocal transplants of juveniles determined that the environment determined female size and age at maturity, whereas genetics determined clutch and egg size. (abstracted from summary)

- Keen, W. H. 1982. Habitat selection and interspecific competition in two species of plethodontid salamanders. Ecology 63(1):94-102.

Desmognathus fuscus and D. monticola were studied in the field and laboratory at Mountain Lake Biological Station, Giles Co., VA to test the hypothesis that competition played no role in the microhabitat utilization and activity patterns of these salamanders. In the presence of D. monticola, D. fuscus utilized microhabitats farther from the stream bed and was less active than when D. monticola was absent. No competitive effects were found for the salamanders' preference for substrate texture, substrate moisture and cover object sizes. (from the abstract)

- Mitchell, J. C., C. A. Pague, and D. L. Early. 1982. Life history: Elaphe obsoleta, autophagy. Herp. Review 13(2):47.

This note reported a juvenile E. obsoleta that exhibited the bizarre behavior of consuming itself. The snake was exposed to a sudden rise of body temperature and, as a result, bit its own tail. It did not release its hold, but continued swallowing until only a circle 4 centimeters in diameter remained. It died, probably from the compression of the lungs. Dissection revealed two complete revolutions within the outer circle. (from the text)

- White, D. R., J. C. Mitchell, and W. S. Woolcott. 1982. Reproductive cycle and embryonic development of Nerodia taxispilota (Serpentes:Colubridae) at the northeastern edge of its range. Copeia 1982(3):646-652.

The seasonal reproductive cycle of N. taxispilota was studied by collecting monthly samples from the Appomattox River, near Hopewell, VA. Adult males ranged from 503-806 mm snout-vent length and adult females from 725-1100 SVL. Weights of testes peaked in August, indicating late summer is the period of peak sperm production. Ovulation of eggs occurs in late June and parturition of offspring in September. The average clutch size was 33.9, but, using only full term embryos, the average was 28.0. The sequential stages of the development of the embryos are described. (abstracted from the abstract and paper)

HUMOR

The following is a bit of wit that was developed at a couple of southern institutions (academic?). We offer it here with the hopes that it may be expanded upon or, at least, may delight your friends.

"HERPETOLOGICAL MYTHS and THE CARE AND FEEDING OF A HERPETOLOGIST

In our scientific age, the public has become conversant with a variety of technical subjects. Unfortunately, this general knowledge almost invariably excludes herpetology. The average person seems to know more about conditions on the moon than he or she does about the herpetologist in their own back yard.

The following information is offered in the hope that it will help to correct this inequity. In Part I, for general readers, we wish to present the facts regarding certain fallacies that have gained currency. Part II, for the serious student of herpetology or the spouse, thereof, consists of basic guidelines for care and feeding. (Part II, the Keeper and the Kept, will appear in the next issue.)

I. FACTS AND FALLACIES

"SHAKING HANDS WITH A HERPETOLOGIST CAN GIVE YOU WARTS." Clammy palms notwithstanding, shaking hands with a herpetologist will give you no more than a momentary shudder. You can't get warts from a herpetologist unless you kiss a herpetologist. It is widely felt that this is a small price to pay for the thrill.

"A HERPETOLOGIST WILL GO OUT OF ITS WAY TO ATTACK." Wrong! The herpetologist is actually a shy creature, and usually seeks only to escape when surprised. He will defend himself vigorously, however, if you inadvertently step on his thesis.

"HERPETOLOGISTS SWALLOW THEIR YOUNG TO PROTECT THEM." This absurd superstition no doubt arose from two entirely disparate facts: (1) Herpetologists are often found surrounded by juvenile herpetologists; and (2) adult herpetologists are usually seen to have their mouths open. Let us make one thing perfectly clear: Herpetologists do NOT swallow their offspring. Only ichthyologists do that.

"HERPETOLOGISTS LIVE FOR CENTURIES." The average life span of a herpetologist is not as long as was once supposed, though it is longer for those with "field" orientation than those confined to laboratory surroundings. Studies of captive herpetologists indicate that most live only as long as they are allowed to, and no longer.

"HERPETOLOGISTS HYPNOTIZE THEIR CONQUESTS." This fallacy no doubt gained popular credence because so many people faint or are stunned to immobility when confronted with a herpetologist. It has been perpetuated by ichthyologists in an attempt to explain why herpetologists do better in singles bars than they do. A herpetologist may bore you to numbness, but will not and cannot hypnotize you.

"THERE IS A 'HOOP' HERPETOLOGIST THAT ROLLS DOWN HILLS." Not so! The person who started this rumor probably saw a herpetologist rolling down a hill yelling "Hoop, Hoop, Hoop." This is not a "hoop" herpetologist, but a common herpetologist (H. mirabilis) who has either stumbled over a beehive or been too long at a meeting."

GENERAL INFORMATION

VaHS SPRING MEETING

RADFORD UNIVERSITY, APRIL 23, 1983

Getting here: Most will arrive by automobile via US Int. 81. It is easiest to take Exit 35, proceeding directly on + 4 miles on Va. Hy. 177 which goes right past the University. Continue on to the traffic light, turn right, continue for about 2 blocks. Curie Hall (on the right) is a big rectangular box with a brick solar screen hiding the windows. There is a parking lot just behind. Meeting headquarters will be in Room 242, and sessions in Room 33 on the ground floor. There will doubtless be some VAHS signs up too, to help mark the way in.

Lodging: There are two motels in Radford. One is within walking distance, the other is about 3 miles away. The rates run about \$21-22 single, \$26-28 double. Please advise of your needs and reservations can be made. There are also two regional camp grounds for those who prefer to camp out, these are about 5 and 10 miles out of town. Ask for details.

Eating: There is the usual variety of restaurants in Radford, with both the endemic cuisine and such exotica as Italian, Mexican, and Chinese. Eating in the University dining halls can also be arranged if desired, it is a bit cheaper (cafeteria style).

Program: We will observe the usual format of a business meeting at 9 a.m. on Saturday morning, and scientific papers - if any - after lunch. If you are planning to present a paper during this session, please send me, by early April, the title and approximate time required so we can make up a program. We have all of the usual kinds of projection equipment. A field trip could be scheduled for that afternoon, and one or more will be arranged for that night (for cryptobranchids and other exotica). If sufficient interest, an on-going field trip could take off on Sunday morning as well. This can be established on Saturday.

Friday night? Some may wish to come early and stay over Friday night. If I know who - how many - to expect - doubtless something could be organized for the early birds, some kind of informal social or maybe salamandering.

PLEASE! If you plan to attend be sure to let me know, either by postcard or phone call, especially if you want lodging arranged or plan to give a paper. Otherwise we have chaos.

Richard Hoffman
Box 5874, Radford Univ., 24142
703-731-5126

Those who respond properly by early April will probably get a program sent to them in advance of the meeting.



SOCIETY FOR THE STUDY OF AMPHIBIANS AND REPTILES

The Society for the Study of Amphibians and Reptiles is a non-profit organization established to advance the study of amphibians and reptiles. Begun as a regional society in 1958, SSAR is today the largest international herpetological society. It is recognized as having the most diverse society-sponsored program of professional services and publications for students of herpetology. Membership is open to anyone with an interest in amphibians and reptiles.

ACTIVITIES

An annual meeting is held each August at a university or field station in the United States. Informal and relatively inexpensive facilities are chosen to encourage student participation. Contributed papers, symposia, workshops, and a variety of exhibits contribute to make this week-long meeting the world's major annual herpetological gathering. The Society makes a concerted effort to involve a diverse segment of its membership in committee activities designed to further our knowledge of amphibians and reptiles and manage the affairs of the Society. Committees include: Annual Meeting, Common and Scientific Names, Grants-in-Herpetology, Herpetological Habitats, Kennedy Award, Legislative Alert, Nominating, Regional Society Liaison, Translations, and Zoo Liaison.

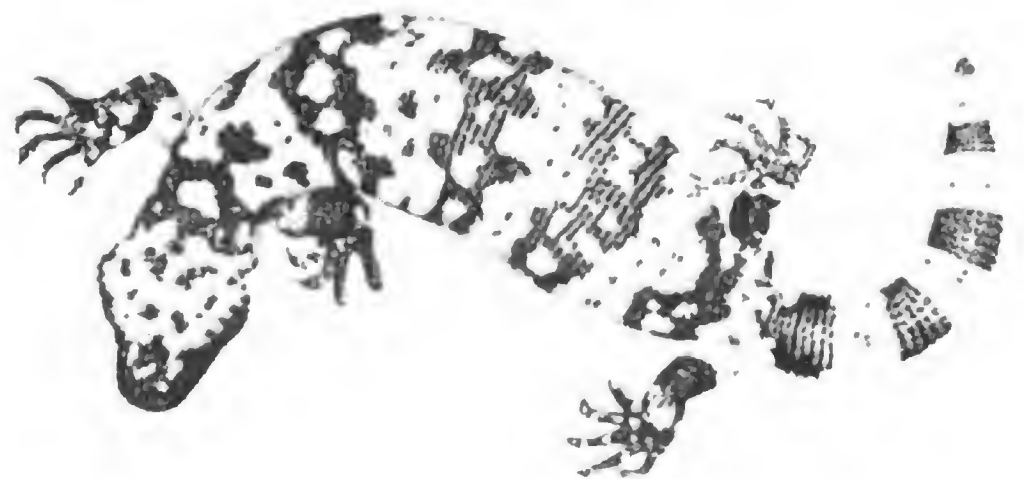
PUBLICATIONS

The *Journal of Herpetology* is the Society's official scientific publication. It is international in scope and broadly covers the biology of amphibians and reptiles. Manuscripts or reviews of any length in English on original research, whether by members or not, are invited. *Herpetological Review* has been the principal newsletter of the herpetological community since 1967. It contains information about people, institutions, programs, and events of interest, including conservation news, geographic distribution records, life history notes, book reviews, regional society news, articles on care of captive specimens, and advertisements of herpetologically related products. A primary service of *Herpetological Review* is publication of a list of "Current Herpetological Titles" to keep readers abreast of the literature. Titles are obtained from a regular search of hundreds of biological journals by members of the Society. The *Facsimile Reprints in Herpetology* series was begun in 1961 to make rare and important books and papers on amphibians and reptiles available once again. All are exact copies with new introductions, indexes, or other features. Selected titles include: Dunn's *Salamanders of the Family Plethodontidae*, Holbrook's *North American Herpetology*, and Gloyd's *Rattlesnakes*. The *Herpetological Circulars* series started in 1973 and serves a broad spectrum of people with an interest in

herpetology. Selected titles include: *A Guide to Preservation Techniques for Amphibians and Reptiles*, *A Brief Outline of Suggested Treatments for Diseases of Captive Reptiles*, and *A Brief History of Herpetology in North America before 1900*. *Contributions to Herpetology* is a new book-length series issued on an irregular basis which comprises the results of taxonomic treatises, symposia, and other comprehensive monographs on amphibian and reptile biology. The first volume, entitled *Reproductive Biology and Diseases of Captive Reptiles*, was issued in 1980. The *Catalogue of American Amphibians and Reptiles* is a series of loose-leaf accounts, each giving a wealth of information about a particular genus or species, including common and scientific names, a description, fossil record, a distribution map, and a literature survey. It is an essential reference for all biologists using amphibians and reptiles in research.

MEMBERSHIP PRIVILEGES

Members have voting privileges in the Society. Each year members receive the *Journal of Herpetology* (4 issues per year), *Herpetological Review* (4 issues per year), and occasional pamphlet-length *Facsimile Reprints in Herpetology*. SSAR members also receive substantial discounts on book-length *Facsimile Reprints*, *Herpetological Circulars*, and *Contributions to Herpetology*. Those persons electing higher membership categories (sustaining and contributing) receive the same publications and services, but provide additional financial support which allows the Society to expand and improve its programs more rapidly than would otherwise be possible.



MEMBERSHIP/SUBSCRIPTION

Please mark box opposite the category you wish to subscribe to or order, fill in your name and address, and return to:

Dr. Henri C. Seibert
Department of Zoology
Ohio University
Athens, Ohio 45701 USA

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Student member	\$15.00* ☐
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SSAR <i>Catalogue of American Amphibians and Reptiles</i>	10.00 ☐

INSTITUTIONAL (per calendar year):

Publications set: <i>Journal of Herpetology</i> , <i>Herpetological Review</i> , and pamphlet-length <i>Facsimile Reprints</i>	30.00* ☐
SSAR <i>Catalogue of American Amphibians and Reptiles</i>	15.00 ☐

*NOTE: All memberships and subscriptions *outside of the U.S.* require a \$5.00 postal surcharge to defray the additional mailing costs. Please add this amount to all Non-U.S. requests. . . . \$5.00 ☐

TOTAL ENCLOSED \$ _____

Make checks payable to SSAR. A receipt will be sent only upon request. Payment in U.S. funds only. non-U.S. members please remit in U.S. dollars only by International Money Order or by a draft on a U.S. bank.

Virginia Herpetological Society



The Virginia Herpetological Society was organized in 1958 to bring together people interested in advancing the knowledge of Virginia's amphibians and reptiles. The VaHS encourages the scientific study of Virginia's herpetofauna and its conservation. Educational activities continue to be important society functions.

Meetings are held twice each year, usually April and October. The program includes an exhibit session and a contributed papers session, during which members present information on their work on the amphibians and reptiles of Virginia.

The VaHS publishes a bulletin, CATESBEIANA, twice each year which contains articles, news and information on various aspects of Virginia herpetology. Members publish field notes and observations, distributional information and suggestions for improving husbandry techniques. Review articles appear occasionally. Material for inclusion should be sent to the editor, Dr. Joseph C. Mitchell, Dept. of Biology, University of Richmond, Richmond, VA 23173.

Society dues are currently \$5.00 per year for members over 18, \$3.00 for members under 18 and \$7.50 for families. Make checks payable to the Virginia Herpetological Society. Inquiries should be addressed to Dr. J. C. Mitchell, Dept. of Biology, University of Richmond, Richmond, VA 23173. Dues should be sent to the treasurer, Ben Greishaw, 7622 Hollins Rd., Richmond, VA 23229.

MEMBERSHIP APPLICATION

I wish to initiate/renew (circle one) membership in the Virginia Herpetological Society for the year 19__.

Name _____

Address _____

Phone _____

Dues Category _____